



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Patent Application of:
Tom L. Bogart, et al.

Serial No.: 09/677,461

Filed: September 29, 2000

For: Multiple Protocol Checkpoint Management)



Art Unit: 2145

Examiner: Kianersi, Mitra

HONORABLE DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,
Washington, D.C. 20231

APPEAL BRIEF

IN SUPPORT OF APPELLANT'S APPEAL

TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Sir:

Applicant (hereafter "Appellant") hereby submits this Brief in support of their Appeal from a final decision by the Examiner in the above-captioned case. Appellant respectfully requests consideration of this Appeal by the Board of Patent Appeals and Interferences for allowance of the claims in the above-captioned patent application.

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I. REAL PARTY IN INTEREST

The invention is assigned to Intel Corporation of 2200 Mission College Boulevard, Santa Clara, California, 95052.

II. RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences related to the present appeal that will directly affect, be directly affected by, or have a bearing on the Board's decision.

III. STATUS OF THE CLAIMS

Claims 1-29 are currently pending and are the subject of this appeal. Claims 1-29 were rejected in the Office Action mailed November 23, 2004.

IV. STATUS OF AMENDMENTS

No amendments have been filed subsequent to the Office Action mailed November 23, 2004.

A copy of all claims on appeal (claims 1-29) is attached hereto as Appendix A.

V. SUMMARY OF CLAIMED SUBJECT MATTER

i. Introduction

The invention relates to data transfer. More particularly, the invention relates to data transfer techniques using multiple protocols. (Specification at Page 1, Lines 3-4). Data is distributed over a network using a first network protocol, for example, a non-reliable protocol. The non-reliable protocol (e.g., multicast) is used to distribute the data from a host system to multiple target systems with reduced overhead as compared to typical reliable protocols.

Portions of the data that are not received by one or more of the target systems are requested and

transmitted via a second network protocol (e.g., hypertext transport protocol, or HTTP). In one embodiment, the target systems maintain a checkpoint management service that determines the portions of data not received. In an alternative embodiment, target systems evaluate data received to determine whether a portion of the transmitted data was not received. (Specification at Page 4, Lines 13-21).

ii. Independent Claim 1

An embodiment of the invention is described with reference to independent claim 1, the specification, and the figures. Host system 210 is a computer system or other electronic system that provides data to one or more target systems over network 200. (Specification at page 7, lines 13-14 and Figure 2). Individual target systems can determine packets or blocks of data not received from the host system using the non-reliable transport protocol. The target systems can request the missing data from the host system and receive the requested data. (Specification at page 8, lines 19-22). Data transfer can be completed using the second network protocol soon after completion of the transfer using the first network protocol or at some later time. (Specification at page 9, lines 9-10).

iii. Independent Claims 6 and 11

An embodiment of the invention is described with reference to independent claims 6 and 11, the specification, and the figures. A machine-readable medium includes any mechanism that provides (i.e., stores and/or transmits) information in a form readable by a machine (e.g., a computer). For example, a machine-readable medium includes read only memory (ROM); random access memory (RAM); magnetic disk storage media; optical storage media; flash

memory devices; electrical, optical, acoustical or other form of propagated signals (e.g., carrier waves, infrared signals, digital signals, etc.); etc. (Specification at page 6, lines 18-23).

Host system 210 is a computer system or other electronic system that provides data to one or more target systems over network 200. (Specification at page 7, lines 13-14 and Figure 2). Individual target systems can determine packets or blocks of data not received from the host system using the non-reliable transport protocol. The target systems can request the missing data from the host system and receive the requested data. (Specification at page 8, lines 19-22). Data transfer can be completed using the second network protocol soon after completion of the transfer using the first network protocol or at some later time. (Specification at page 9, lines 9-10).

iv. Independent Claim 16

An embodiment of the invention is described with reference to independent claim 16, the specification, and the figures. Host system 210 is a computer system or other electronic system that provides data to one or more target systems over network 200. (Specification at page 7, lines 13-14 and Figure 2). The missing data is requested using a reliable protocol at 440. In one embodiment, each target system individually requests the missing data from the host system. In an alternate embodiment, multiple target systems can collectively request missing data from the host system to further reduce the bandwidth consumed by data distribution. (Specification at page 12, lines 3-8 and Figure 4). Data transfer can be completed using the second network protocol soon after completion of the transfer using the first network protocol or at some later time. (Specification at page 9, lines 9-10).

v. Independent Claim 20

An embodiment of the invention is described with reference to independent claim 20, the specification, and the figures. A machine-readable medium includes any mechanism that provides (i.e., stores and/or transmits) information in a form readable by a machine (e.g., a computer). For example, a machine-readable medium includes read only memory (ROM); random access memory (RAM); magnetic disk storage media; optical storage media; flash memory devices; electrical, optical, acoustical or other form of propagated signals (e.g., carrier waves, infrared signals, digital signals, etc.); etc. (Specification at page 6, lines 18-23).

Host system 210 is a computer system or other electronic system that provides data to one or more target systems over network 200. (Specification at page 7, lines 13-14 and Figure 2). The missing data is requested using a reliable protocol at 440. In one embodiment, each target system individually requests the missing data from the host system. In an alternate embodiment, multiple target systems can collectively request missing data from the host system to further reduce the bandwidth consumed by data distribution. (Specification at page 12, lines 3-8 and Figure 4). Data transfer can be completed using the second network protocol soon after completion of the transfer using the first network protocol or at some later time. (Specification at page 9, lines 9-10).

vi. Independent Claim 24

An embodiment of the invention is described with reference to independent claim 24, the specification, and the figures. Host system 210 is a computer system or other electronic system that provides data to one or more target systems over network 200. (Specification at page 7, lines 13-14 and Figure 2). The missing data is requested using a reliable protocol at 440. In one embodiment, each target system individually requests the missing data from the host system. In

an alternate embodiment, multiple target systems can collectively request missing data from the host system to further reduce the bandwidth consumed by data distribution. The target systems assemble the complete files (Specification at page 12, lines 3-9 and Figure 4).

vii. Independent Claim 27

An embodiment of the invention is described with reference to independent claim 27, the specification, and the figures. A machine-readable medium includes any mechanism that provides (i.e., stores and/or transmits) information in a form readable by a machine (e.g., a computer). For example, a machine-readable medium includes read only memory (ROM); random access memory (RAM); magnetic disk storage media; optical storage media; flash memory devices; electrical, optical, acoustical or other form of propagated signals (e.g., carrier waves, infrared signals, digital signals, etc.); etc. (Specification at page 6, lines 18-23).

Host system 210 is a computer system or other electronic system that provides data to one or more target systems over network 200. (Specification at page 7, lines 13-14 and Figure 2). The missing data is requested using a reliable protocol at 440. In one embodiment, each target system individually requests the missing data from the host system. In an alternate embodiment, multiple target systems can collectively request missing data from the host system to further reduce the bandwidth consumed by data distribution. The target systems assemble the complete files (Specification at page 12, lines 3-9 and Figure 4).

viii. Dependent Claims 2, 7, 12, 18, 22, 25 and 28

Embodiments of the invention are described with reference to, for example, dependent claims 2, 7, 12, 18, 22, 25 and 28, the specification and the figures. In one embodiment, host system 210 transmits data to target systems 220, 225, 230 and 235 via a multicasting protocol.

(Specification at page 7, lines 20-22 and Figure 2). Multicasting is a non-reliable data transport protocol because data is transmitted to multiple target systems without a mechanism for guaranteeing delivery or retransmission of data that is not successfully transmitted and received. Thus, multicasting is typically used for data in which packets of data can be lost, for example, audio and video data streams. Multicasting provides a relatively low overhead technique for distribution of data to multiple target systems. However, non-reliable data transmission protocols alone cannot be used for transmission of data that is critical to operation.

(Specification at page 8, lines 9-16).

ix. Dependent Claims 4, 9, 15, 19, 23, 26 and 29

Embodiments of the invention are described with reference to dependent claims 4, 9, 15, 19, 23, 26 and 29, the specification and the figures. Reliable transport protocols can be used to transmit data that was not received by target systems using the non-reliable transport protocol. For example, individual target systems can determine packets or blocks of data not received from the host system using the non-reliable transport protocol. The target systems can request the missing data from the host system and receive the requested data via a reliable transport protocol, for example, HTTP. (Specification at page 8, lines 17-22).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,385,647 issued to Willis, et al. (*Willis*) in view of U.S. Patent No. 5,784,622 issued to Kalwitz, et al. (*Kalwitz*).

VII. ARGUMENT

A. REJECTION UNDER 35 U.S.C. § 103(a)

i. Independent Claims 1, 6, 11, 16, 20, 24 and 27

Independent claims 1, 6, 11, 16, 20, 24 and 27 were rejected as being unpatentable over *Willis* in view of *Kalwitz*. For at least the reasons set forth below Appellants submit that *Willis* and *Kalwitz* do not render claims 1, 6, 11, 16, 20, 24 and 27 obvious.

Claim 1, for example, recites:

transmitting data over a network using a first network protocol from a host electronic system to one or more target electronic systems;
determining data not received by at least one of the target electronic systems using the first network protocol; and
requesting, from the host electronic system, the data not received by at least one of the target electronic systems be transmitted using a second network protocol.

As a preliminary matter, Appellants note that the Office Actions have addressed transmission of data using multiple protocols. However, the Office Actions have not specifically addressed the claim limitations related to *determining data not received by at least one target device or retransmission of data not received by a different network protocol* than originally used to transmit the data. For example, the most recent Office Action states:

Applicant on page 9, line 11 argues that the transmission protocols are not used for retransmission purposes or even for transmitting the same data to different recipient devices. *Kalwitz* on col 30, lines 46, discloses that it is possible for both the Novell operating system and the UNIX operating system to use the same frame packet type; it is the operating system protocols (SPX/IPX for Novell and TCP/IP for UNIX), which determine which one of the operating systems in a multiportocol environment is currently communicating on the LAN bus.

See page 2.

In addition to not addressing the claim limitations, this is a mischaracterization of Appellants arguments. The Office Action does not address the claim limitation related to ***retransmission of data not received by a different network protocol***, which is what Appellants have repeatedly pointed out as the deficiency of the cited references. While Appellants agree that Fig. 11 of *Kalwitz* discloses two transmission protocols, the two transmission protocols are not used in the manner recited in the claims. That is, a first protocol is not used for a first transmission of data and the second protocol used for retransmission of data not received during the first transmission.

Willis discloses multicasting of multimedia information. See Abstract. *Willis* further discloses determining whether transmission was unsuccessful. See col. 4, lines 36-38. Specifically, *Willis* discloses retransmission via ***multicasting*** in response to an error status. See col. 4, lines 39-42. Thus, *Willis* discloses transmission using a first protocol (multicast) and retransmission using the same protocol. Therefore, *Willis* explicitly ***teaches away*** from the invention as claimed. That is, *Willis* discloses transmission using a multicast protocol and retransmission using the same multicast protocol.

Because *Kalvitz* discloses transmission from different devices using different protocols and *Willis* discloses transmission and retransmission using the same protocol, nothing in the combination of *Klavitz* and *Willis* can teach or suggest transmitting data using a first protocol, determining data not received using the first protocol and then requesting transmission of the data not received via a second protocol. Therefore, no combination of *Klavitz* and *Willis* can teach or suggest the claimed invention.

ii. Dependent Claims 2-5, 7-10, 12-15, 17-19, 21-23, 25, 26, 28 and 29

Dependent claims 2, 7, 12, 18, 22, 25 and 28 depend from the independent claims discussed above and add the limitation that the first transmission is accomplished using a non-reliable network protocol, for example, a broadcast or a multicast protocol. *Klavitz* discloses transmission using two protocols; however, these transmissions are unicast transmissions (e.g., to a printer) and *Klavitz* does not disclose retransmission using a second protocol. *Willis* discloses multicast transmissions, but not retransmission using a second protocol. Therefore, no combination of *Klavitz* and *Willis* can teach or suggest the invention as claimed in claims 2, 7, 12, 18, 22, 25 and 28.

Dependent claims 4, 9, 15, 19, 23, 26 and 29 depend from the independent claims discussed above and add the limitation that the second transmission is accomplished using a reliable network protocol. *Klavitz* discloses transmission using two protocols; however, the second transmission is a retransmission of unreceived data using a reliable protocol. *Willis* discloses retransmission, but not retransmission of unreceived data using a reliable protocol. Therefore, no combination of *Klavitz* and *Willis* can teach or suggest the invention as claimed in claims 4, 9, 15, 19, 23, 26 and 29.

IX. CONCLUSION

Appellant respectfully submits that all the pending claims in this patent application are patentable and request that the Board of Patent Appeals and Interferences overrule the Examiner and direct allowance of the rejected claims.

Please charge any shortages and credit any overcharges to Deposit Account No. 02-2666.

Respectfully submitted,

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X. APPENDIX A: CLAIMS ON APPEAL

1. (Previously Presented) A method comprising:
 - transmitting data over a network using a first network protocol from a host electronic system to one or more target electronic systems;
 - determining data not received by at least one of the target electronic systems using the first network protocol; and
 - requesting, from the host electronic system, the data not received by at least one of the target electronic systems be transmitted using a second network protocol.
2. (Original) The method of claim 1 wherein the first network protocol is a non-reliable network protocol.
3. (Original) The method of claim 2 wherein the non-reliable network protocol comprises one of a broadcast protocol and a multicast protocol.
4. (Original) The method of claim 1 wherein the second network protocol is a reliable network protocol.
5. (Original) The method of claim 1, wherein determining data not received by at least one of the target electronic systems further comprises logging, with a checkpoint management service, packets of data received by the target electronic systems.

6. (Previously Presented) An article comprising a machine readable medium having stored thereon sequences of instructions that, when executed, cause one or more electronic systems to:

transmit data over a network using a first network protocol from a host electronic system to one or more target electronic systems;

determine data not received by at least one of the target electronic systems using the first network protocol; and

request, from the host electronic system, the data not received by at least one of the target electronic systems be transmitted using a second network protocol.

7. (Original) The article of claim 6 wherein the first network protocol is a non-reliable network protocol.

8. (Original) The article of claim 6 wherein the non-reliable network protocol comprises one of a broadcast protocol and a multicast protocol.

9. (Original) The article of claim 6 wherein the second network protocol is a reliable network protocol.

10. (Original) The article of claim 6, wherein the sequences of instructions that cause the one or more electronic systems to determine data not received by at least one of the target electronic systems further comprise sequences of instructions that, when executed, cause the one

or more electronic systems to log, with a checkpoint management service, packets of data received by the target electronic systems.

11. (Previously Presented) A computer data signal embodied in a data communications medium shared among a plurality of network devices comprising sequences of instructions that, when executed, cause one or more electronic systems to:

transmit data over a network using a first network protocol from a host electronic system to one or more target electronic systems;

determine data not received by at least one of the target electronic systems using the first network protocol; and

request, from the host electronic system, the data not received by at least one of the target electronic systems be transmitted using a second network protocol.

12. (Original) The computer data signal of claim 11 wherein the first network protocol is a non-reliable network protocol.

13. (Original) The computer data signal of claim 11 wherein the non-reliable network protocol comprises one of a broadcast protocol and a multicast protocol.

14. (Original) The computer data signal of claim 11, wherein the sequences of instructions that cause the one or more electronic systems to determine data not received by at least one of the target electronic systems further comprise sequences of instructions that, when

executed, cause the one or more electronic systems to log, with a checkpoint management service, packets of data received by the target electronic systems.

15. (Original) The article of claim 11 wherein the second network protocol is a reliable network protocol.

16. (Previously Presented) A method comprising:
transmitting a predetermined set of data using a first network protocol to multiple target systems;
receiving one or more requests from at least one target system for a subset of data from the predetermined set of data;
transmitting the one or more subsets of data to at least one target system using a second network protocol.

17. (Original) The method of claim 16 wherein transmitting a predetermined set of data using a first network protocol to multiple target systems comprises logging transmitted packets of data with a checkpoint management service for one or more of the target systems.

18. (Original) The method of claim 16 wherein the first network protocol comprises a non-reliable network protocol.

19. (Previously Presented) The method of claim 16 wherein the second network protocol comprises a reliable network protocol.

20. (Previously Presented) An article comprising a machine readable medium having stored thereon sequences of instructions that, when executed, cause one or more electronic systems to:

transmitting a predetermined set of data using a first network protocol to multiple target systems;

receiving one or more requests from at least one target system for a subset of data from the predetermined set of data;

transmitting the one or more subsets of data to at least one target system using a second network protocol.

21. (Original) The article of claim 20 wherein the sequences of instructions that cause the one or more electronic systems to transmit a predetermined set of data using a first network protocol to multiple target systems comprise sequences of instructions that, when executed, cause the one or more electronic systems to log transmitted packets of data with a checkpoint management service for one or more of the target systems.

22. (Original) The article of claim 20 wherein the first network protocol comprises a non-reliable network protocol.

23. (Original) The article of claim 20 wherein the second network protocol comprises a reliable network protocol.

24. (Original) A method comprising:

receiving at least a portion of a predetermined set of data from a host system using a first network protocol;

generating one or more requests from for subsets of data from the predetermined set of data;

receiving the subsets of data from the host system using a second network protocol.

25. (Original) The method of claim 24 wherein the first network protocol comprises

a non-reliable network protocol.

26. (Original) The method of claim 24 wherein the second network protocol

comprises a reliable protocol.

27. (Original) An article comprising a machine readable medium having stored

thereon sequences of instructions that, when executed, cause one or more electronic systems to:

receive at least a portion of a predetermined set of data from a host system using a first network protocol;

generate one or more requests from for subsets of data from the predetermined set of data;

receive the subsets of data from the host system using a second network protocol.

28. (Original) The article of claim 27 wherein the first network protocol comprises a

non-reliable network protocol.

29. (Original) The article of claim 27 wherein the second network protocol comprises a non-reliable network protocol.